#### **AMENDMENTS TO THE CLAIMS**

The following **Listing of Claims** will replace all prior versions, and listings of claims in the application.

#### 1-78. (Cancelled)

#### 79. (New) A compound having one of the following structures:

or pharmaceutically acceptable salt thereof;

wherein  $R_1$  and  $R_2$  are hydrogen or lower alkyl;

 $\mathbf{R_3}$ ,  $\mathbf{R_5}$  and  $\mathbf{R_6}$  are  $\mathbf{C_{1-6}}$  alkyl;

the bond is a single bond or a double bond;

 $R_4$  is halogen,  $-OR^{4A}$ ,  $-OC(=O)R^{4A}$  or  $-NR^{4A}R^{4B}$ ; wherein  $R^{4A}$  and  $R^{4B}$  are independently hydrogen; a nitrogen protecting group selected from a carbamate, an amide, a cyclic imide derivative, an N-alkyl amine, an N-aryl amine, an imine derivative or an enamine derivative or an oxygen protecting group selected from a substituted methyl ether, a substituted ethyl ether, a substituted benzyl ether, a silyl ether, an ester, a carbonate, a cyclic acetal or a ketal; or  $R^{4A}$  and  $R^{4B}$ , taken together with the nitrogen atom to which they are attached, form a  $C_{3-20}$  heterocyclic or  $C_{3-14}$  heteroaryl moiety; or  $R_4$ , taken together with the carbon atom to which it is attached

or  $R^{4A}$  and  $R^{4B}$  are independently a  $C_{1-6}$  alkyl group optionally substituted with one or more of  $C_{1-20}$  aliphatic;  $C_{3-14}$  aryl;  $C_{3-14}$  heteroaryl;  $C_{1-20}$  alkyl $C_{3-14}$  arylthio;  $C_{3-14}$  aryloxy;  $C_{1-20}$  heteroalkoxy,  $C_{3-14}$  heteroaryloxy;  $C_{1-20}$  alkylthio;  $C_{3-14}$  arylthio; hetero $C_{1-20}$  alkylthio; hetero $C_{3-14}$  arylthio; F; Cl; Br; I; -OH;  $-NO_2$ ; -CN;  $-CF_3$ ;  $-CH_2CF_3$ ;  $-CHC1_2$ ;  $-CH_2OH$ ;  $-CH_2OH$ ;  $-CH_2NH_2$ ;  $-CH_2SO_2CH_3$ ;  $-C(O)R_x$ ;  $-CO_2(R_x)$ ;  $-CON(R_x)_2$ ;  $-OC(O)R_x$ ;  $-OCO_2R_x$ ;  $-OCON(R_x)_2$ ;  $-N(R_x)_2$ ;  $S(O)_2R_x$ ;  $-NR_x(CO)R_x$  wherein each occurrence of  $R_x$  is independently  $C_{1-20}$  aliphatic, hetero $C_{1-20}$ aliphatic,  $C_{3-14}$  aryl,  $C_{3-14}$  heteroaryl,  $C_{1-20}$  alkyl $C_{3-14}$  aryl or  $C_{1-20}$  alkyl $C_{3-14}$  heteroaryl;

 $X_1$  is O, S,  $NR^{X1}$  or  $CR^{X1}R^{X2}$ ; wherein  $R^{X1}$  and  $R^{X2}$  are independently hydrogen, halogen, or a substituted or unsubstituted  $C_{1-20}$  alkyl, hetero $C_{1-20}$ alkyl, cyclo $C_{3-10}$ alkyl, heterocyclo  $C_{3-10}$ alkyl,  $C_{3-14}$  aryl or  $C_{3-14}$  heteroaryl, or a nitrogen protecting group selected from a carbamate, an amide, a cyclic imide derivative, an N-alkyl amine, an N-aryl amine, an imine derivative or an enamine derivative;

 $\label{eq:Q} \textbf{Q} \text{ is hydrogen, halogen, -CN, -S(O)}_{1\text{-}2}R^{Q1}, \text{-NO}_2, \text{-COR}^{Q1}, \text{-CO}_2R^{Q1}, \text{-NR}^{Q1}C(=O)R^{Q2}, \text{-}\\ NR^{Q1}C(=O)OR^{Q2}, \text{-CONR}^{Q1}R^{Q2}, \text{ or a substituted or unsubstituted } C_{1\text{-}20} \text{ aliphatic, heteroC}_{1\text{-}}\\ \text{20aliphatic, } C_{3\text{-}20} \text{ alicyclic, heteroC}_{3\text{-}20} \text{alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety, or -WR}^{Q1};\\ \text{wherein W is independently O, S or NR}^{Q3} \text{ and each occurrence of } R^{Q1}, R^{Q2} \text{ and } R^{Q3} \text{ is independently hydrogen, or a substituted or unsubstituted } C_{1\text{-}20} \text{ aliphatic, heteroC}_{1\text{-}20} \text{aliphatic, } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{20 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{30 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{31 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{32 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{33 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{33 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{34 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{34 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{35 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{35 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3\text{-}14} \text{ heteroaryl moiety;} \\ \text{36 alicyclic, heteroC}_{3\text{-}20} \text{ alicyclic, } C_{3\text{-}14} \text{ aryl or } C_{3$ 

 $\mathbf{Y_2}$  is hydrogen, or a substituted or unsubstituted  $C_{1\text{-}20}$  alkyl, hetero $C_{1\text{-}20}$ alkyl, cyclo  $C_{3\text{-}10}$ alkyl, heterocyclo $C_{3\text{-}10}$ alkyl,  $C_{3\text{-}14}$ aryl, or  $C_{3\text{-}14}$  heteroaryl moiety; or  $-WR^{Y1}$ ;

W is O or NH; and

 $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen, or a substituted or unsubstituted  $C_{1-20}$  aliphatic, hetero $C_{1-20}$ aliphatic,  $C_{3-20}$  alicyclic, hetero $C_{3-20}$ alicyclic,  $C_{3-14}$  aryl or  $C_{3-14}$  heteroaryl moiety;

wherein for the compound of formula (a), when  $X^1$  is O and the bond  $\overline{}$  is a double bond, Q is hydrogen, halogen, -CN,  $-S(O)_{1-2}R^{Q1}$ ,  $-NO_2$ ,  $-COR^{Q1}$ ,  $-CO_2R^{Q1}$ ,  $-NR^{Q1}C(=O)R^{Q2}$ ,  $-NR^{Q1}C(=O)R^{Q2}$ ,  $-CONR^{Q1}R^{Q2}$ , or  $-WR^{Q1}$ ; wherein W is independently O, S or  $NR^{Q3}$  and each occurrence of  $R^{Q1}$ ,  $R^{Q2}$  and  $R^{Q3}$  is independently hydrogen, or a substituted or unsubstituted  $C_{1-20}$ 

aliphatic, hetero $C_{1\text{--}20}$ aliphatic,  $C_{3\text{--}20}$  alicyclic, hetero $C_{3\text{--}20}$  alicyclic,  $C_{3\text{--}14}$  aryl or  $C_{3\text{--}14}$  heteroaryl moiety.

80. (New) The compound of claim 1 having one of the following structures:

or pharmaceutically acceptable salt thereof.

81. (New) The compound of claim 2, wherein the compound has the structure:

wherein n is 3;  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;  $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1-6}$  alkyl moiety;  $R^{8B}$  is hydrogen or  $C_{1-6}$  alkyl; and X, Y and Z are independently a bond, -O-, -S-, -C(=O)-, -NR<sup>Z1</sup>-, -CHOR<sup>Z1</sup>, -CHNR<sup>Z1</sup>R<sup>Z2</sup>, C=S, C=N(R<sup>Y1</sup>) or -CH(Hal); or a substituted or unsubstituted  $C_{0-6}$ alkylidene or  $C_{0-6}$ alkenylidene chain wherein up to two non-adjacent methylene units are independently optionally replaced by CO, CO<sub>2</sub>, COCO, CONR<sup>Z1</sup>, OCONR<sup>Z1</sup>, NR<sup>Z1</sup>NR<sup>Z2</sup>, NR<sup>Z1</sup>NR<sup>Z2</sup>CO, NR<sup>Z1</sup>CO, NR<sup>Z1</sup>CO<sub>2</sub>, NR<sup>Z1</sup>CONR<sup>Z2</sup>, SO, SO<sub>2</sub>, NR<sup>Z1</sup>SO<sub>2</sub>, SO<sub>2</sub>NR<sup>Z1</sup>, NR<sup>Z1</sup>SO<sub>2</sub>NR<sup>Z2</sup>, O, S, or NR<sup>Z1</sup>; wherein Hal is a halogen selected from F, Cl, Br and I; and each occurrence of R<sup>Z1</sup> and R<sup>Z2</sup> is independently hydrogen,  $C_{1-20}$  alkyl, hetero $C_{1-20}$  alkyl,  $C_{3-14}$  aryl,  $C_{3-14}$  heteroaryl or  $C_{1-20}$  acyl; or  $R^{Z1}$  and  $R^{Z2}$ , taken together with the nitrogen atom to which they are attached, form a heterocyclic or heteroaryl moiety;

or pharmaceutically acceptable salt thereof.

#### 82. (New) The compound of claim 2, wherein the compound has the structure:

wherein n is 3;  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;  $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1-6}$  alkyl moiety;  $R^{8B}$  is hydrogen or  $C_{1-6}$  alkyl; and Y is  $-CHOR^{Y1}$ ,  $-CHNR^{Y1}R^{Y2}$ , C=O, C=S,  $C=N(R^{Y1})$  or -CH(Hal); wherein Hal is a halogen selected from F, Cl, Br and I; and  $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen,  $C_{1-20}$  alkyl, hetero $C_{1-20}$  alkyl,  $C_{3-14}$  aryl,  $C_{3-14}$  heteroaryl or  $C_{1-20}$  acyl, or  $R^{Y1}$  and  $R^{Y2}$ , taken together with the nitrogen atom to which they are attached, form a heterocyclic or heteroaryl moiety; or a pharmaceutically acceptable salt thereof.

#### 83. (New) The compound of claim 2, wherein the compound has the structure:

wherein n is 3;  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;  $R^{8B}$  is hydrogen or  $C_{1-6}$  alkyl; and  $R^Y$  is hydrogen, halogen,  $-OR^{Y1}$  or  $-NR^{Y1}NR^{Y2}$ ; wherein  $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen,  $C_{1-20}$  alkyl, hetero $C_{1-20}$  alkyl,  $C_{3-14}$  aryl,  $C_{3-14}$  heteroaryl or  $C_{1-20}$  acyl, or  $R^{Y1}$  and  $R^{Y2}$ , taken together with the nitrogen atom to which they are attached, form a heterocyclic or heteroaryl moiety;

or a pharmaceutically acceptable salt thereof.

84. (New) The compound of claim 80, wherein the compound has the structure:

wherein n is 3;  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;  $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1-6}$  alkyl moiety; and  $R^{8B}$  is hydrogen or  $C_{1-6}$  alkyl;

or a pharmaceutically acceptable salt thereof.

### 85. (New) The compound of claim 79, wherein the compound has the structure:

wherein n is 3; and  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;

or a pharmaceutically acceptable salt thereof.

#### 86. (New) The compound of claim 79, wherein the compound has the structure:

$$\begin{array}{c} R^{Y1} \\ R^{Y2} \\ R^{Y1} \\ R^{Y1$$

wherein n is 3; and  $R^{\rm Y1}$  and  $R^{\rm Y2}$  are independently hydrogen or  $C_{1\text{-}6}$  alkyl; or a pharmaceutically acceptable salt thereof.

## 87. **(New)** The compound of claim 80, wherein the compound has one of the following structures:

W is O or NH;

 $R^{Y1}$  is hydrogen, or a substituted or unsubstituted  $C_{1\text{-}20}$  aliphatic, hetero $C_{1\text{-}20}$ aliphatic,  $C_{3\text{-}20}$  alicyclic, hetero $C_{3\text{-}20}$  alicyclic,  $C_{3\text{-}14}$  aryl or  $C_{3\text{-}14}$  heteroaryl moiety;

 $R_7$  is a substituted or unsubstituted  $C_{1-6}$  alkyl or hetero $C_{1-6}$ alkyl moiety;

 $R_8$  is a substituted or unsubstituted  $C_{1\text{--}20}$  alkyl, hetero $C_{1\text{--}20}$ alkyl, cyclo $C_{3\text{--}20}$ alkyl, heterocyclo $C_{3\text{--}20}$ alkyl,  $C_{3\text{--}14}$  aryl or  $C_{3\text{--}14}$  heteroaryl moiety; and Alk is a substituted or unsubstituted  $C_{0\text{--}6}$ alkylidene or  $C_{0\text{--}6}$ alkenylidene chain wherein up to two non-adjacent

methylene units are independently optionally replaced by CO, CO<sub>2</sub>, COCO, CONR<sup>Z1</sup>, OCONR<sup>Z1</sup>, NR<sup>Z1</sup>NR<sup>Z2</sup>, NR<sup>Z1</sup>NR<sup>Z2</sup>CO, NR<sup>Z1</sup>CO, NR<sup>Z1</sup>CO<sub>2</sub>, NR<sup>Z1</sup>CONR<sup>Z2</sup>, SO, SO<sub>2</sub>, NR<sup>Z1</sup>SO<sub>2</sub>, SO<sub>2</sub>NR<sup>Z1</sup>, NR<sup>Z1</sup>SO<sub>2</sub>NR<sup>Z2</sup>, O, S, or NR<sup>Z1</sup>; wherein each occurrence of R<sup>Z1</sup> and R<sup>Z2</sup> is independently hydrogen,  $C_{1-20}$  alkyl, hetero $C_{1-20}$  alkyl,  $C_{3-14}$  aryl,  $C_{3-14}$  heteroaryl or  $C_{1-20}$  acyl; wherein for compounds of formula (**a**), when **X**<sup>1</sup> is O, the bond  $\stackrel{\dots}{}$  is a single bond; or a pharmaceutically acceptable salt thereof.

88. (New) The compound of claim 80, wherein the compound has one of the following structures:

wherein  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl; or a pharmaceutically acceptable salt thereof.

89. **(New)** The compound of claim 80, wherein the compound has one of the following structures:

$$R_{7}m_{m_{1}}$$
 $R_{6}$ 
 $R_{5}m_{m_{1}}$ 
 $R_{6}$ 
 $R_{7}m_{m_{1}}$ 
 $R_{6}$ 
 $R_{5}m_{m_{1}}$ 
 $R_{6}$ 
 $R_{7}m_{m_{1}}$ 
 $R_{6}$ 
 $R_{7}m_{m_{1}}$ 
 $R_{6}$ 
 $R_{7}m_{m_{1}}$ 
 $R_{7}m_{m_{1}}$ 
 $R_{8}$ 
 $R_{7}m_{m_{1}}$ 
 $R_{8}$ 
 $R_{8}$ 

wherein  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1\text{-}6}$  alkyl;  $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1\text{-}6}$  alkyl moiety;  $R^{8B}$  is hydrogen or  $C_{1\text{-}6}$  alkyl; and X, Y and Z are independently a bond, -O-, -S-, -C(=O)-,  $-NR^{Z1}$ -,  $-CHOR^{Z1}$ ,  $-CHOR^{Z1}$ ,  $-CHOR^{Z1}$ ,  $-CHOR^{Z1}$ , or -CH(Hal); or a substituted or unsubstituted  $C_{0\text{-}6}$  alkylidene or  $C_{0\text{-}6}$  alkenylidene chain wherein up to two non-adjacent methylene units are independently optionally replaced by CO,  $CO_2$ , COCO,  $CONR^{Z1}$ ,  $OCONR^{Z1}$ ,  $NR^{Z1}NR^{Z2}$ ,  $NR^{Z1}NR^{Z2}CO$ ,  $NR^{Z1}CO$ ,  $NR^{Z1}CO$ ,  $NR^{Z1}CO_2$ ,  $NR^{Z1}CONR^{Z2}$ , SO,  $SO_2$ ,  $NR^{Z1}SO_2$ ,  $SO_2NR^{Z1}$ ,  $NR^{Z1}SO_2NR^{Z2}$ , O, S, or  $NR^{Z1}$ ; wherein Hal is a halogen selected from F, CI, F and F and F and F is independently hydrogen, F alkyl, heteroF alkyl, F and F are attached, form a F and F and F and F and F are attached, form a F and F and F and F and F are attached, form a F and F and F and F are attached, form a F and F and F are attached, form a F and F and F are attached, form a F and F and F are a pharmaceutically acceptable salt thereof.

90. (New) The compound of claim 80, wherein the compound has one of the following structures:

$$R_{7}m_{1}$$
 $R_{8}$ 
 $R_{7}m_{1}$ 
 $R_{6}$ 
 $R_{7}m_{1}$ 
 $R_{6}$ 
 $R_{7}m_{1}$ 
 $R_{8}$ 
 $R_{8}$ 

 $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;

 $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1\text{-}6}$  alkyl moiety;  $R^{8B}$  is hydrogen or  $C_{1\text{-}6}$  alkyl; and Y is  $-\text{CHOR}^{Y1}$ ,  $-\text{CHNR}^{Y1}R^{Y2}$ , C=O, C=S, C=N( $R^{Y1}$ ) or -CH(Hal); wherein Hal is a halogen selected from F, Cl, Br and I; and  $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen,  $C_{1\text{-}20}$  alkyl, hetero $C_{1\text{-}20}$ alkyl,  $C_{3\text{-}14}$  aryl,  $C_{3\text{-}14}$  heteroaryl or  $C_{1\text{-}20}$  acyl, or  $R^{Y1}$  and  $R^{Y2}$ , taken together with the nitrogen atom to which they are attached, form a  $C_{3\text{-}20}$  heterocyclic or  $C_{3\text{-}14}$  heteroaryl moiety;

or a pharmaceutically acceptable salt thereof.

91. (New) The compound of claim 80, wherein the compound has one of the following structures:

wherein  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;

 $R^{8B}$  is hydrogen or  $C_{1\text{-}6}$  alkyl; and  $R^Y$  is hydrogen, halogen, -OR $^{Y1}$  or -NR $^{Y1}$ NR $^{Y2}$ ; wherein  $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen,  $C_{1\text{-}20}$  alkyl, hetero $C_{1\text{-}20}$ alkyl,  $C_{3\text{-}14}$  aryl,  $C_{3\text{-}14}$  heteroaryl or  $C_{1\text{-}20}$  acyl, or  $R^{Y1}$  and  $R^{Y2}$ , taken together with the nitrogen atom to which they are attached, form a  $C_{3\text{-}20}$  heterocyclic or  $C_{3\text{-}14}$  heteroaryl moiety; or a pharmaceutically acceptable salt thereof.

92. **(New)** The compound of claim 80, wherein the compound has one of the following structures:

$$R_{7}$$
 $R_{1}$ 
 $R_{2}$ 
 $R_{3}$ 
 $R_{4}$ 
 $R_{5}$ 
 $R_{1}$ 
 $R_{1}$ 
 $R_{2}$ 
 $R_{4}$ 
 $R_{5}$ 
 $R_{5$ 

wherein  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1-6}$  alkyl;

 $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1\text{--}6}$  alkyl moiety; and  $R^{8B}$  is hydrogen or  $C_{1\text{--}6}$  alkyl; or a pharmaceutically acceptable salt thereof.

# 93. **(New)** The compound of claim 79, wherein the compound has one of the following structures:

wherein  $Y_2$  and  $R^{Y1}$  are independently hydrogen or  $C_{1\text{-}6}$  alkyl; or a pharmaceutically acceptable salt thereof.

94. **(New)** The compound of claim 79, wherein the compound has one of the following structures:

$$R^{Y1}$$
 $R^{Y2}$ 
 $R^{Y1}$ 
 $R$ 

and  $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen or  $C_{1-6}$  alkyl; or a pharmaceutically acceptable salt thereof.

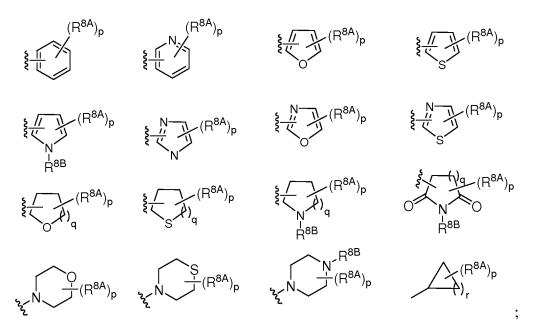
- 95. (New) The compound of claim 79, wherein  $R_1$  and  $R_2$  are each hydrogen.
- 96. (New) The compound of claim 79, wherein  $R_3$  is  $C_{1-6}$  alkyl.
- 97. (New) The compound of claim 96, wherein  $R_3$  is methyl.
- 98. (New) The compound of claim 79, wherein  $R_5$  and  $R_6$  are each methyl;  $R_4$  is OH, OAc, NH<sub>2</sub> or halogen, or  $R_4$  taken together with the carbon atom to which it is attached forms a moiety having the structure:
- 99. (New) The compound according to any one of claims 81 or 89, wherein  $R_7$  is  $C_{1-6}$  alkyl.
- 100. (New) The compound according to claim 99, wherein  $R_7$  is methyl.
- 101. (New) The compound according to claim 79 of formula (b) or (c) or the compound of formula (a) wherein when  $X^1$  is O, the bond  $\cdots$  is a single bond, wherein Q has the structure:

wherein  $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1-6}$  alkyl moiety;  $R_8$  is a substituted or unsubstituted  $C_{3-20}$  carbocyclic,  $C_{3-20}$  heterocyclic,  $C_{3-14}$  aryl or  $C_{3-14}$  heteroaryl moiety; and X, Y and Z are independently a bond, -O-, -S-, -C(=O)-,  $-NR^{Z1}$ -,  $-CHOR^{Z1}$ ,  $-CHNR^{Z1}R^{Z2}$ , C=S,  $C=N(R^{Y1})$  OR -CH(Hal); or a substituted or unsubstituted  $C_{0-6}$  alkylidene or  $C_{0-6}$  alkenylidene chain where up to two non-adjacent methylene units are independently optionally replaced by CO,  $CO_2$ , COCO,  $CONR^{Z1}$ ,  $OCONR^{Z1}$ ,  $NR^{Z1}NR^{Z2}$ ,  $NR^{Z1}NR^{Z2}$ ,  $NR^{Z1}NR^{Z2}$ ,  $NR^{Z1}CO$ ,

102. (New) The compound according to claim 79 of formula (b) or (c) or the compound of formula (a) wherein when  $X^1$  is O, the bond  $\cdots$  is a single bond, wherein Q has the structure:

wherein  $R_7$  is a substituted or unsubstituted, linear or branched, cyclic or acyclic  $C_{1-6}$  alkyl moiety;  $R_8$  is a substituted or unsubstituted  $C_{3-20}$  carbocyclic,  $C_{3-20}$  heterocyclic,  $C_{3-14}$  aryl or  $C_{3-14}$  heteroaryl moiety; and  $R^Y$  is hydrogen, halogen,  $-OR^{Y1}$  or  $-NR^{Y1}NR^{Y2}$ ; wherein  $R^{Y1}$  and  $R^{Y2}$  are independently hydrogen,  $C_{1-20}$  alkyl, hetero $C_{1-20}$ alkyl,  $C_{3-14}$ aryl,  $C_{3-14}$  heteroaryl or  $C_{1-20}$  acyl, or  $R^{Y1}$  and  $R^{Y2}$ , taken together with the nitrogen atom to which they are attached, form a  $C_{3-20}$  heterocyclic or  $C_{3-14}$  heteroaryl moiety.

103. (New) The compound of any one of claims 87, 98, or 99, wherein R<sub>8</sub> is one of:



wherein p is an integer from 0 to 5, as valency allows; q is 1 or 2, r is an integer from 1 to 6; each occurrence of  $R^{8A}$  is independently hydrogen,  $C_{1\text{-}20}$  alkyl, hetero $C_{1\text{-}20}$ alkyl,  $C_{3\text{-}14}$  aryl,  $C_{3\text{-}14}$  heteroaryl,  $-(C_{1\text{-}20}$  alkyl) $C_{3\text{-}14}$  aryl or  $-(C_{1\text{-}20}$  alkyl) $C_{3\text{-}14}$ heteroaryl,  $-OR^{8C}$ ,  $-SR^{8C}$ ,  $-N(R^{8C})_2$ ,  $-SC_{2}N(R^{8C})_2$ ,  $-(C=O)N(R^{8C})_2$ , halogen, -CN,  $-NO_2$ ,  $-(C=O)OR^{8C}$ ,  $-N(R^{8C})(C=O)R^{8D}$ , wherein each occurrence of  $R^{8C}$  and  $R^{8D}$  is independently hydrogen,  $C_{1\text{-}6}$  alkyl,  $C_{1\text{-}6}$  heteroalkyl,  $C_{3\text{-}14}$  aryl,  $C_{3\text{-}14}$  heteroaryl,  $-(C_{1\text{-}20}$  alkyl) $C_{1\text{-}20}$  aryl or  $-(C_{1\text{-}20}$  alkyl) $C_{3\text{-}14}$  heteroaryl; and each occurrence of  $R^{8B}$  is independently hydrogen or  $C_{1\text{-}6}$  alkyl.

104. (New) The compound of claim 103, wherein  $R_8$  has the structure:

wherein R<sup>8B</sup> is hydrogen or C<sub>1-6</sub> alkyl.

105. (New) The compound of claim 80 or 87, wherein  $Y_2$  is  $C_{1-6}$  alkyl and  $R^{Y1}$  is hydrogen or  $C_{1-6}$  alkyl.

106. (New) The compound of claim 80 or 87, wherein  $R^{Y1}$  is H and  $Y_2$  is  $CF_3$ .

107. (New) The compound of claim 94, wherein  $R_4$  is hydroxyl,  $C_{1-6}$  alkoxy, acyloxy, amino or halogen, or  $R_4$  taken together with the carbon atom to which it is attached forms a moiety

- 108. (New) The compound of claim 94, wherein  $R_4$  is OH, OAc,  $NH_2$  or F, or  $R_4$  taken together with the carbon atom to which it is attached forms a moiety having the structure:
- 109. (New) The compound of claim 94, wherein the stereocenter OR<sub>3</sub> has the following stereochemistry: OR<sub>3</sub>.
- 110. (New) The compound of claim 94, wherein the stereocenter OR<sub>3</sub> has the following stereochemistry: OR<sub>3</sub> .
- 111. (New) The compound of claim 94, wherein  $R_3$ ,  $R_5$  and  $R_6$  are each methyl and  $R_4$  is OH, OAc, NH<sub>2</sub> or F, or  $R_4$  taken together with the carbon atom to which it is attached forms a moiety

112. (New) The compound according to claim 79, wherein the compound is selected from:

or a pharmaceutically acceptable salt thereof.

## 113. (New) A compound having the formula

or pharmaceutically acceptable salt thereof.

#### 114. (New) A compound having the structure:

or pharmaceutically acceptable salt thereof;

wherein  $R_1$  and  $R_2$  are each independently hydrogen

 $\mathbf{R_{3}}$ ,  $\mathbf{R_{5}}$  and  $\mathbf{R_{6}}$  are  $\mathbf{C}_{1-6}$  alkyl;

 $R_4$  is halogen,  $-OR^{4A}$ ,  $-OC(=O)R^{4A}$  or  $-NR^{4A}R^{4B}$ ; wherein  $R^{4A}$  and  $R^{4B}$  are independently hydrogen, or substituted or unsubstituted  $C_{1-6}$  alkyl; a nitrogen protecting group selected from a carbamate, an amide, a cyclic imide derivative, an N-alkyl amine, an N-aryl amine, an imine derivative or an enamine derivative or an oxygen protecting group selected from a methyl ether, a substituted methyl ether, a substituted benzyl ether, a silyl ether, an ester, a carbonate, a cyclic acetal or a ketal; or  $R^{4A}$  and  $R^{4B}$ , taken together with the nitrogen atom to which they are attached, form a  $C_{3-20}$  heterocyclic or  $C_{3-14}$  heteroaryl moiety; or  $R_4$ , taken together with the carbon atom to which it is attached forms a moiety having the structure:

 $X_1$  is O, S,  $NR^{X1}$  or  $CR^{X1}R^{X2}$ ; wherein  $R^{X1}$  and  $R^{X2}$  are independently hydrogen, halogen, or substituted or unsubstituted  $C_{1-20}$  alkyl, hetero $C_{1-20}$ alkyl, cyclo $C_{3-10}$ alkyl, heterocyclo  $C_{3-10}$ alkyl,  $C_{3-14}$  aryl or  $C_{3-14}$  heteroaryl, or a nitrogen protecting group selected from a carbamate, an amide, a cyclic imide derivative, an N-alkyl amine, an N-aryl amine, an imine derivative or an enamine derivative; and

 $Y_1$  and  $Y_2$  are independently hydrogen, or a substituted or unsubstituted  $C_{1-20}$  alkyl, hetero $C_{1-20}$ alkyl, cyclo  $C_{3-10}$ alkyl, heterocyclo $C_{3-10}$ alkyl,  $C_{3-14}$ aryl, or  $C_{3-14}$  heteroaryl moiety; or  $-WR^{Y1}$ ; wherein W is independently -O-, -S- or  $NR^{Y2}$  wherein each occurrence of  $R^{Y1}$  and  $R^{Y2}$ 

is independently hydrogen or an  $C_{1-20}$  alkyl, hetero $C_{1-20}$ alkyl, cyclo $C_{3-10}$ alkyl, heterocyclo $C_{3-10}$ alkyl,  $C_{3-14}$  aryl or  $C_{3-14}$  heteroaryl moiety; or  $\mathbf{Y_1}$  and  $\mathbf{Y_2}$  together with the carbon atom to which

they are attached form a moiety having the structure:  $R^{Y1}$ ,  $R^{Y2}$ ,  $R^{Y1}$ , or  $R^{Y1}$ 

115. (New) The compound of claim 114 having the structure:

wherein n is 3; and  $Y_1$  and  $Y_2$  are independently hydrogen,  $C_{1-6}$  alkyl, or  $CF_3$ .

116. (New) The compound of claim 114 having the structure:

wherein  $Y_1$  and  $Y_2$  are independently hydrogen,  $C_{1\text{-}6}$  alkyl, or  $CF_3$ .

- 117. (New) The compound of claim 115 or 116, wherein  $R_5$  and  $R_6$  are each methyl.
- 118. (New) The compound of claim 115 or 116, wherein  $R_3$  is lower alkyl.
- 119. (New) The compound of claim 118, wherein  $R_3$  is methyl.

- 120. (New) The compound of claim 115 or 116, wherein R<sub>4</sub> is OH, OAc, NH<sub>2</sub> or halogen.
- 121. **(New)** A pharmaceutical composition comprising:

  a pharmaceutically acceptable carrier, adjuvant or vehicle; and
  a compound according to any one of claims 79, 112, 113, or 114, or a
  pharmaceutically acceptable salt thereof.
- 122. **(New)** The pharmaceutical composition of claim 121, further comprising a cytotoxic agent.
- 123. (New) The pharmaceutical composition of claim 122, wherein the cytotoxic agent is an anticancer agent.
- 124. **(New)** The pharmaceutical composition of claim 123, wherein the anticancer agent is 12,13-desoxyepothilone B, (E)-9,10-dehydro-12,13-desoxyEpoB, 26-CF3-(E)-9,10-dehydro-12,13-desoxyEpoB, taxol, radicical orTMC-95A/B.
- 125. (New) The pharmaceutical composition of claim 121, further comprising a palliative agent.